

MATERIALS LICENSE

Amendment No. 01

Pursuant to the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974 (Public Law 93-438), and Title 10, Code of Federal Regulations, Chapter I, Parts 30, 31, 32, 33, 34, 35, 39, 40 and 70, and in reliance on statements and representations heretofore made by the licensee, a license is hereby issued authorizing the licensee to receive, acquire, possess, and transfer byproduct, source, and special nuclear material designated below; to use such material for the purpose(s) and at the place(s) designated below; to deliver or transfer such material to persons authorized to receive it in accordance with the regulations of the applicable Part(s). This license shall be deemed to contain the conditions specified in Section 183 of the Atomic Energy Act of 1954, as amended, and is subject to all applicable rules, regulations and orders of the Nuclear Regulatory Commission now or hereafter in effect and to any conditions specified below.

Licensee

1. DeKalb Plant Genetics

Discovery Research

2. 62 Maritime Drive

Mystic, Connecticut 06355-1958

In accordance with letter dated
September 8, 1992,3. License number 06-28624-01 is amended in
its entirety to read as follows:

4. Expiration date April 30, 1997

5. Docket or
Reference No. 030-321266. Byproduct, source, and/or
special nuclear material7. Chemical and/or physical
form8. Maximum amount that licensee
may possess at any one time
under this license

A. Hydrogen 3

B. Carbon 14

C. Phosphorus 32

D. Sulfur 35

A. Any

B. Any

C. Any

D. Any

A. 10 millicuries

B. 10 millicuries

C. 90 millicuries

D. 25 millicuries

9. Authorized use

A. through D. Research and development as defined in 10 CFR 30.4.

CONDITIONS

10. Licensed material may be used only at the licensee's facilities at 62 Maritime Drive, Mystic, Connecticut.

11. A. Licensed material shall be used by, or under the supervision of, Emil M. Orozco, Jr., William J. Gordon-Kamm, Albert P. Kausch, Peter M. Orr, Paul S. Chomet, Christopher E. Flick, Paul C. Anderson, Alan L. Kriz, Michael A. Stephens, or Donald S. Walters.

B. The Radiation Safety Officer for this license is Emil M. Orozco, Jr.

12. The licensee shall not use licensed material in or on human beings or in field applications where activity is released except as provided otherwise by specific condition of this license.

13. A. Sealed sources and detector cells shall be tested for leakage and/or contamination at intervals not to exceed 6 months or at such other intervals as are specified by the certificate of registration referred to in 10 CFR 32.210, not to exceed 3 years.

B. Notwithstanding Paragraph A of this Condition, sealed sources designed to emit alpha particles shall be tested for leakage and/or contamination at intervals not to exceed 3 months.

OFFICIAL RECORD COPY ML 10 11

MATERIALS LICENSE
SUPPLEMENTARY SHEET

License number

06-28624-01

Docket or Reference number

030-32126

Amendment No. 01

(13. Continued)

CONDITIONS

- C. In the absence of a certificate from a transferor indicating that a test has been made within six months prior to the transfer, a sealed source or detector cell received from another person shall not be put into use until tested.
- D. Each sealed source fabricated by the licensee shall be inspected and tested for construction defects, leakage, and contamination prior to any use or transfer as a sealed source.
- E. Sealed sources and detector cells need not be leak tested if:
- (i) they contain only hydrogen 3; or
 - (ii) they contain only a gas; or
 - (iii) the half-life of the isotope is 30 days or less; or
 - (iv) they contain not more than 100 microcuries of beta and/or gamma emitting material or not more than 10 microcuries of alpha emitting material; or
 - (v) they are not designed to emit alpha particles, are in storage, and are not being used. However, when they are removed from storage for use or transfer to another person, and have not been tested within the required leak test interval, they shall be tested before use or transfer. No sealed source or detector cell shall be stored for a period of more than 10 years without being tested for leakage and/or contamination.
- F. The test shall be capable of detecting the presence of 0.005 microcurie of radioactive material on the test sample. Records of leak test results shall be kept in units of microcuries and shall be maintained for inspection by the Commission. If the test reveals the presence of 0.005 microcurie or more of removable contamination, a report shall be filed with the U.S. Nuclear Regulatory Commission and the source shall be removed from service and decontaminated, repaired, or disposed of in accordance with Commission regulations. The report shall be filed within 5 days of the date the leak test result is known with the U.S. Nuclear Regulatory Commission, Region I, ATTN: Chief, Nuclear Materials Safety Branch, 475 Allendale Road, King of Prussia, Pennsylvania 19406. The report shall specify the source involved, the test results, and corrective action taken.
- G. The licensee is authorized to collect leak test samples for analysis by the licensee. Alternatively, tests for leakage and/or contamination may be performed by persons specifically licensed by the Commission or an Agreement State to perform such services.
14. Sealed sources or detector cells containing licensed material shall not be opened or sources removed from source holders or detector cells by the licensee.

MATERIALS LICENSE
SUPPLEMENTARY SHEET

License number

06-28624-01

Docket or Reference number

030-32126

Amendment No. 01

(Continued)

CONDITIONS

15. The licensee shall conduct a physical inventory every 6 months to account for all sources and/or devices received and possessed under the license. Records of inventories shall be maintained for 5 years from the date of each inventory.
16. The licensee is authorized to hold radioactive material with a physical half-life of less than 65 days for decay-in-storage before disposal in ordinary trash provided:
 - A. Radioactive waste to be disposed of in this manner shall be held for decay a minimum of 10 half-lives.
 - B. Before disposal as normal waste, radioactive waste shall be surveyed to determine that its radioactivity cannot be distinguished from background. All radiation labels shall be removed or obliterated.
17. The licensee shall not store licensed material contained in waste for more than two (2) years from the date the waste is put into storage. The licensee shall maintain records which indicate the date that licensed material contained in waste is put into storage. This condition does not apply to licensed material intended for disposal by decay-in-storage pursuant to 10 CFR 35.92 or other conditions of this license.
18. Except as specifically provided otherwise in this license, the licensee shall conduct its program in accordance with the statements, representations, and procedures contained in the documents, including any enclosures, listed below. The Nuclear Regulatory Commission's regulations shall govern unless the statements, representations and procedures in the licensee's application and correspondence are more restrictive than the regulations.
 - A. Application dated February 28, 1991
 - B. Letter dated October 13, 1991
 - C. Letter dated January 16, 1992
 - D. Letter dated April 1, 1992

Date

NOV 24 1992

For the U.S. Nuclear Regulatory Commission

Original Signed By:

By

Elizabeth Uilrich

Nuclear Materials Safety Branch
Region I

King of Prussia, Pennsylvania 19406

NOV 24 1992

License No. 06-28624-01
Docket No. 030-32126
Control No. 117129

DeKalb Plant Genetics
ATTN: Emil M. Orozco
Radiation Safety Officer
62 Maritime Drive
Mystic, Connecticut 06355-1958

Dear Mr. Orozco:

Please find enclosed an amendment to your NRC Material License.

Please review the enclosed document carefully and be sure that you understand all conditions. If there are any errors or questions, please notify the Region I Material Licensing Section, (215) 337-5093, so that we can provide appropriate corrections and answers.

Please be advised that you must conduct your program involving licensed radioactive materials in accordance with the conditions of your NRC license, representations made in your license application, and NRC regulations. In particular, please note the items in the enclosed, "Requirements for Materials Licensees."

Since serious consequences to employees and the public can result from failure to comply with NRC requirements, the NRC expects licensees to pay meticulous attention to detail and to achieve the high standard of compliance which the NRC expects of its licensees.

You will be periodically inspected by NRC. A fee may be charged for inspections in accordance with 10 CFR Part 170. Failure to conduct your program safely and in accordance with NRC regulations, license conditions, and representations made in your license application and supplemental correspondence with NRC will result in prompt and vigorous enforcement action against you. This could include issuance of a notice of violation, or in case of serious violations, an imposition of a civil penalty or an order suspending, modifying or revoking your license as specified in the General Policy and Procedures for NRC Enforcement Actions, 10 CFR Part 2, Appendix C.

We wish you success in operating a safe and effective licensed program.

Sincerely,

Original Signed By:
Elizabeth Ullrich



John D. Kinneman, Chief
Research, Development and
Decommissioning Section
Division of Radiation Safety
and Safeguards

Enclosures:

1. Amendment No. 01
2. Requirements for Materials Licensees

DRSS:RI
Weidner/cmm

11/16/92

DRSS:RI
for Kinneman

11/22/92

DEKALB Plant Genetics



DISCOVERY RESEARCH
62 MARITIME DRIVE
MYSTIC, CT 06355-1958
(203)572-5200 FAX(203)572-5240

030-32126
06-28624-01

DATE: November 6, 1992

TO: Carol Whitener - Mail Control No. 117129

COMPANY: U.S. Nuclear Regulatory Commission

FAX NUMBER: 215-337-5269

FROM: Emil M. Orozco

CCX

Total number of pages to transmit, including cover page: five

If you do not receive this fax legibly, call Marie Weston at 203-572-5200.

=====

Dear Ms. Whitener:

I am sending you the information on four new Ph.D.s that have joined our company. We would like to have our NRC license amended to allow for their supervision of employees using radioisotopes. I am also mailing this information to you.

Our NRC license Number is 06-28624-01.

Thank you.

Sincerely,

Emil M. Orozco

OFFICIAL RECORD COPY ML 10

117129
NOV 10 1992

RADIOACTIVITY TRAINING AND EXPERIENCE

Name: Paul C. Anderson

Education: Ph.D. Biochemistry, 1979, University of Minnesota
B.S. Biochemistry, 1974, University of Minnesota

TRAINING AND EXPERIENCE

	TYPE OF TRAINING	WHERE TRAINED	DURATION OF TRAINING	ON THE JOB	FORMAL COURSE
a.	Principles and practices of radiation protection.	Dept. of Biochemistry, U. of Minn.	3 months		X
b.	Radioactivity measurement standardization and monitoring techniques and instruments.	Dept. of Biochemistry, U. of Minn.	3 months		X
c.	Mathematics and calculations basic to the use and measurement of radioactivity.	Dept. of Biochemistry U. of Minn.	3 months		X
d.	Biological effects of radiation.	Dept. of Biochemistry	3 months		X

EXPERIENCE WITH RADIATION. (Actual use of radioisotopes or equivalent experience.)

ISOTOPE	MAXIMUM AMOUNT	WHERE EXPERIENCE WAS GAINED	DURATION OF EXPERIENCE	TYPE OF USE
¹⁴ C - ³² P - ³⁵ S - ³ H -	50μCi 5mCi 100μCi 50μCi	Dept. of Biochemistry University of Minnesota	2 years	radiolabelled biochemicals (laboratory)
¹⁴ C -	100μCi	Pfizer, Inc. Central Research	2 years	radiolabelled biochemicals (binding studies)
¹⁴ C - ³ H -	10μCi 50μCi	Molecular Genetics, Inc.	4 years	radiolabelled biochemicals (plant metabolism studies)

RADIOACTIVITY TRAINING AND EXPERIENCE

Name: Alan L. Kriz

Education: B.A., 1978, Hiram College
Ph.D., 1983, Indiana University
Post-doctoral, 1984-1987, Purdue University

TRAINING AND EXPERIENCE

TYPE OF TRAINING	WHERE TRAINED	DURATION OF TRAINING	ON THE JOB	FORMAL COURSE
a. Principles and practices of radiation protection.	(a) Hiram College	3 months	no	yes
	(b) Indiana University	5 months	no	yes
	(c) Purdue University	3 years	yes	no
	(d) University of Illinois	5 years	yes	no
b. Radioactivity measurement standardization and monitoring techniques and instruments.	(a) Indiana University	5 months	no	yes
	(b) Purdue University	3 years	yes	no
	(c) University of Illinois	5 years	yes	no
c. Mathematics and calculations basic to the use and measurement of radioactivity.	(a) Indiana University	5 months	no	yes
	(b) Purdue University	3 years	yes	no
	(c) University of Illinois	5 years	yes	no
d. Biological effects of radiation.	(a) Hiram College	3 months	no	yes
	(b) Indiana University	5 months	no	yes

EXPERIENCE WITH RADIATION. (Actual use of radioisotopes or equivalent experience.)

ISOTOPE	MAXIMUM AMOUNT	WHERE EXPERIENCE WAS GAINED	DURATION OF EXPERIENCE	TYPE OF USE
³ H	200μCi	Indiana University	4 years	Lab
³⁵ S	500μCi	Indiana University	4 years	Lab
³² P	200μCi	Purdue University	3 years	Lab
		University of Illinois	5 years	Lab

RADIOACTIVITY TRAINING AND EXPERIENCE

Name: Michael A. Stephens

Education: B.S., University of London, Microbiology
Ph.D., University of East Anglia, UK (John Innes Institute)
Post-doctoral Fellow, Harvard University

TRAINING AND EXPERIENCE

	TYPE OF TRAINING	WHERE TRAINED	DURATION OF TRAINING	ON THE JOB	FORMAL COURSE
a.	Principles and practices of radiation protection.	John Innes Institute Norwich, England	4 years	yes	no
		Harvard University	2 years	yes	no
		Biotechnica International	8 years	yes	yes
b.	Radioactivity measurement standardization and monitoring techniques and instruments.	John Innes Institute	4 years	yes	yes
		Harvard University	2 years	yes	no
		Biotechnica International	8 years	yes	yes
c.	Mathematics and calculations basic to the use and measurement of radioactivity.	John Innes Institute	4 years	no	no
		Harvard University	2 years	no	no
		Biotechnica International	8 years	yes	yes
d.	Biological effects of radiation.	John Innes Institute	4 years	yes	yes
		Biotechnica International	8 years	yes	yes

EXPERIENCE WITH RADIATION. (Actual use of radioisotopes or equivalent experience.)

ISOTOPE	MAXIMUM AMOUNT	WHERE EXPERIENCE WAS GAINED	DURATION OF EXPERIENCE	TYPE OF USE
³ H	1mCi	John Innes Institute	2 - 4 years	labeling cells
¹⁴ C	1mCi	John Innes Institute	2 - 4 years	labeling cells
³² P	2mCi	Harvard University	2 years	labeling cells & DNA
³⁵ S	1mCi	Biotechnica International	4 years	labeling cells & proteins
				radioimmune assays
¹²⁵ I	1mCi	Biotechnica International	2 years	radioimmune assays
³⁵ S	1mCi	Biotechnica (Plant Science Research Inc.)	3 years	DNA Sequencing
ALL LAB USE				

RADIOACTIVITY TRAINING AND EXPERIENCE

Name: Donald S. Walters

Education: Ph.D., Entomology/Biochemistry, Penn State
Post-doctoral Fellowship, Cornell University
BS/MS, Clarion University, Penn.

TRAINING AND EXPERIENCE

	TYPE OF TRAINING	WHERE TRAINED	DURATION OF TRAINING	ON THE JOB	FORMAL COURSE
a.	Principles and practices of radiation protection.	(a) Penn State (b) Cornell	2 years 2 years	yes yes	yes yes
b.	Radioactivity measurement standardization and monitoring techniques and instruments.	(a) Penn State (b) Cornell	2 years 2 years	yes yes	yes yes
c.	Mathematics and calculations basic to the use and measurement of radioactivity.	(a) Penn State (b) Cornell	2 years 2 years	yes yes	yes yes
d.	Biological effects of radiation.	(a) Penn State (b) Cornell	2 years 2 years	yes yes	yes yes

EXPERIENCE WITH RADIATION (Actual use of radioisotopes or equivalent experience.)

ISOTOPE	MAXIMUM AMOUNT	WHERE EXPERIENCE WAS GAINED	DURATION OF EXPERIENCE	TYPE OF USE
^3H	250 μCi	Cornell and Penn State	2 years	laboratory
^{14}C	100 μCi	Cornell and Penn State	4 years	laboratory

10-27-92

4:25

TELEPHONE OR VERBAL CONVERSATION RECORD

☒ INCOMING CALL

☐ OUTGOING CALL

☐ VISIT

PERSON CALLING

Tara Weidner

OFFICE/ADDRESS

Region I

PHONE NUMBER | EXTENSION

X5272

PERSON CALLED

Emil Orozco

OFFICE/ADDRESS

Dekalb

PHONE NUMBER | EXTENSION

(203) 572-5221

CONVERSATION

SUBJECT

License Amendment

SUMMARY

On 10-26-92 Mr. Orozco stated that he wanted to add more authorized users. Is that information coming in the mail? Mr. Orozco will get info to us by end of week.

REFERRED TO:

ACTION REQUESTED

1

ACTION TAKEN

☐ ADVISE ME OF ACTION TAKEN.

INITIALS

DATE

INITIALS

DATE

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117129

DEKALB Plant Genetics

DISCOVERY RESEARCH
62 MARITIME DRIVE
MYSTIC, CT 06355-1958
(203) 572-5200 FAX (203) 572-5240



MS 16

J-9

October 26, 1992

FAXED
10-26

Mail Control No. 117129

Ms. Carol Whitener
U.S. Nuclear Regulatory Commission
Nuclear Materials Safety Branch
Region I
King of Prussia, PA 19406

Dear Ms. Whitener:

This letter is regarding our change of mailing address. As of September 14, 1992 our mailing address has been:

DEKALB Plant Genetics
Discovery Research
62 Maritime Drive
Mystic, CT 06355-1958

Our mailing address is also the location of the facility where we have licensed material. In our NRC license, the facility address was given as Stonington, Connecticut. Although we are located in the Town of Stonington, our mailing address is actually Mystic, Connecticut. Mystic is the historical designation of this area and is the address we prefer to use for our business correspondence. Please change the address in our NRC license accordingly.

Our NRC license number is 06-28624-01 and our Docket No. is 030-32126.

Sincerely yours,

Emil M. Orozco
Radiation Safety Officer
(203) 572-5221

EMO/kh
300

OFFICIAL RECORD COPY ML 10

117129

OCT 30 1992

FAX RECD 10/26/92

10-26-92

11:15

TELEPHONE OR VERBAL CONVERSATION RECORD

☐ VISIT

☐ INCOMING CALL

☒ OUTGOING CALL

PHONE NUMBER | EXTENSION

PERSON CALLING

Tara Weidner

OFFICE/ADDRESS

Region I

X5272

PERSON CALLED

Emil Orozco

OFFICE/ADDRESS

Dekalb

PHONE NUMBER | EXTENSION

(203) 572-5200

CONVERSATION

SUBJECT

License Amendment

SUMMARY

- ① Mailing / Place of use address discrepancy. Is it Mystic or Stonington.
- ② Would like to add additional users. Will send info on training / experience.

REFERRED TO:

ACTION REQUESTED

Wait for info.

ACTION TAKEN

☐ ADVISE ME OF ACTION TAKEN.

INITIALS

DATE

INITIALS

DATE

DEKALB Plant Genetics



DISCOVERY RESEARCH
EASTERN POINT ROAD
GROTON, CT 06340

(203) 441-3861 FAX (203) 441-5841

030-32126

September 8, 1992

Francis M. Costello
U.S. Nuclear Regulatory Commission
Nuclear Materials Safety Branch
Region I
King of Prussia, PA 19406

Dear Mr. Costello:

This letter is to inform the NRC of our change of mailing address. As of September 14, 1992, our address will be:

DEKALB Plant Genetics
Discovery Research
62 Maritime Drive
Mystic, CT 06355-1958

and the main telephone and fax numbers will be:

Telephone: 203-572-5200
FAX: 203-572-5240

Our NRC license number is 06-28624-01, and our Docket No. is 030-32126.

Thank you.

Sincerely,

Emil M. Orozco
Radiation Safety Officer
(203)441-5440 (until 9/14/92)

FEE EXEMPT

Mailing Address Chg Only

Cy to SC + MR

92 SEP 21 11:00
RECEIVED
U.S. NUCLEAR REG. COM.
LIMMIS-001

RECEIVED BY LFDCB	
Date	10/14/92
Log	Let 5
By	<i>[Signature]</i>
Date Completed	11/1/92

117129

OFFICIAL RECORD COPY ML 10

SEP 10 1992

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1      (FOR LFMS USE)
2      INFORMATION FROM LTS
3      =====
4
5      PROGRAM CODE: 03620
6      STATUS CODE: 0
7      FEE CATEGORY: 3M
8      EXP. DATE: 19970430
9      FEE COMMENTS: -----
10     DECOM FIN ASSUR REQD: N
11     =====

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LICENSE FEE MANAGEMENT BRANCH, ARM
AND
REGIONAL LICENSING SECTIONS

A. REGION

APPLICANT/LICENSEE: DEKALB PLANT GENETICS
RECEIVED DATE: 920910
DOCKET NO: 3032126
CONTROL NO.: 117129
LICENSE NO.: 06-28624-01
ACTION TYPE: AMENDMENT

AMOUNT: \$ 0
CHECK NO.: 0

SIGNED Rebecca J. Brown
DATE 9/15/92

FREE EXEMPT

Marling Road City Only

AMENDMENT
RENEWAL
LICENSE

SIGNED 10/1/92
DATE 10/1/92